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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,626	11/28/2001	Daniel L. Gysling	753-001.002	5322

7590

07/29/2003

James A. Retter
Ware, Fressola, Van Der Sluys & Adolphson LLP
755 Main Street
P.O. Box 224
Monroe, CT 06468

EXAMINER

LAU, TUNG S

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,626

Applicant(s)

GYSLING ET AL.

Examiner

Tung S Lau

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6 is/are rejected.
- 7) ☒ Claim(s) 2 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 June 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 1, 4, 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumoel (U.S. Patent 5,453,944) and Proffitt et al. (U.S. Patent 5,415,024).

Regarding claim 1:

Baumoel discloses a method for determining component flow rates of a multiphase fluid in a conduit, the fluid consisting of at least three known components (Col. 3, Lines 4-13, Col. 15, Lines 22-43) , the method comprising the steps of a) measuring at each of two different positions along the conduit at least four mixture quantities (Col. 15, Lines 22-43, Col. 16, Lines 47-60); b) providing a speed of sound value for the speed of sound in each of the components at the measured pressures and temperatures (Col. 15, Lines 1-21, Col. 16-17, Lines 61-30, (Col. 3, Lines 4-35) ; c) providing a trial value for each of either the component flow rates or the phase fractions (Col. 5, Lines 34-53) ; d) using a predetermined model to calculate values for the measured mixture quantities based on the trial values for each of either the component flow rates or

Art Unit: 2863

the phase fractions (Col. 5-6, Lines 54-33) ; e) using a predetermined error function to determine an error value (Col. 13, Lines 7-20, Col. 27-28, Lines 50-10) ; and f) using a predetermined optimizing algorithm to determine whether the calculated values are acceptable (Col. 13, Lines 27-59) , and if they are not, to provide a new trial value for each of either the component flow rates or the phase fractions (Col. 13, Lines 47-59).

Regarding claim 4:

Baumoeel discloses an apparatus for determining component flow rates of a multiphase fluid in a conduit, the fluid consisting of at least three known components, the apparatus comprising a) means for measuring at each of two different positions along the conduit at least four mixture quantities (Col. 3, Lines 4-20, Col. 15, Lines 23-47, Col. 16, Lines 47-60) ; b) means for providing a speed of sound value for the speed of sound in each of the components at the measured pressures and temperatures (Col. 15, Lines 1-21, Col. 5, Lines 10-33, Col. 16, Lines 47-60) ; c) means for providing a trial value for each of either the component flow rates or the phase fractions (Col. 13, Lines 27-46); d) means for using a predetermined model to calculate values for the measured mixture quantities based on the trial values for each of either the component flow rates or the phase fractions (Col. 5, Lines 10-33) ; e) means for using a predetermined error function to determine an error value (Col. 13, Lines 7-20, Col. 27-28, Lines 50-10); and f) means for using a predetermined optimizing algorithm to determine whether the calculated values are acceptable (Col. 13, Lines 27-59), and, if they

Art Unit: 2863

are not, to provide a new trial value for each of either the component flow rates or the phase fractions (Col. 13, Lines 47-59).

Regarding claims 3 and 6 :

Baumoel discloses a method wherein the four mixture quantities are the sound speed, the flow velocity (Col. 7, Lines 34-35) of the multiphase fluid, the pressure and the temperature (Col. 3, Lines 4-20, Col. 15, Lines 23-47, Col. 16, Lines 47-60).

Baumoel does not disclose the four different mixture quantities are measured; Proffitt discloses the four different mixture quantities are measured in order to determine the composition of the fluid (Col. 2, Lines 47-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Baumel to have the four different mixture quantities are measured taught by Proffitt measured in order to determine the composition of the fluid (Col. 2, Lines 47-54).

Claim Objections

2. Claims 2 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: prior art fail to teach the sum of square of the difference between the measured and calculated values at each point.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

3. Applicant's arguments with respect to claims 1, 4, 3 and 6 have been considered but are moot in view of the new ground(s) of rejection. However, applicant's arguments filed 6/24/2003 have been fully considered but they are not persuasive.

A. Applicant argues that the prior art does not show the 'determining components flow rates for multiple phases flow'; Baumoel discloses 'determining components flow rates for multiple phases flow' in abstract and Col. 3, Lines 31-32.

B. Applicant also argues that the prior art does not show the 'trial value for each of component flow rates'; Baumoel discloses 'trial value for each of component flow rates' in figure 3A, block 34, 38, 40.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Art Unit: 2863

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


TC2800 RightFAX Telephone Numbers : TC2800 Official Before-Final RightFAX - (703)

872-9318, TC2800 Official After-Final RightFAX - (703) 872-9319

TC2800 Customer Service RightFAX - (703) 872-9317

TL

July 14, 2003


John Barlow
Supervisory Patent Examiner
Technology Center 2800